CLAIMS

1. An electromagnetic retarder to reduce the speed of rotation of a rotating machine, the retarder comprising a stator passed through by a first shaft having a first end and a second end, axially opposed, and intended to be coupled respectively to a second shaft linked to a motive source and a third shaft linked to a load, and a rotor linked in rotation with the first shaft, wherein said first shaft is configured at at least one of its first end or second end in such a way that it can be respectively coupled to said second shaft or said third shaft in an axially sliding manner.

2. The electromagnetic retarder according to claim 1, characterized in that one of said first or second ends of said first shaft is configured in such a way that it can receive said second shaft by hafting and in that the other of said first or second ends is configured in such a way that it can be mounted in the third shaft by hafting.

3. The electromagnetic retarder according to claim 1, characterized in that said first end of said first shaft is configured in such a way that it can receive said second shaft by hafting.

4. The electromagnetic retarder according to claim 1, characterized in that said second end of said first shaft is configured in such a way that it constitutes a sliding flange intended to receive a propshaft connected to driving wheels.

5. The electromagnetic retarder according to claim 4, characterized in that said sliding flange comprises an integrated jaw intended to constitute an integral part of a cardan joint by which the propshaft linked to driving wheels is connected to the retarder.

6. The electromagnetic retarder according to claim 1, characterized in that said first shaft passes through said rotor and is assembled in the latter both firmly linked in rotation and axially sliding.

7. The electromagnetic retarder according to claim 1, characterized in that it comprises a rotor with single disc.

8. The electromagnetic retarder according to claim 7, characterized in that said rotor is arranged on the side of the first end of the first shaft.

9. The electromagnetic retarder according to claim 7, characterized in that said rotor is arranged on the side of the second end of the first shaft.

10. The electromagnetic retarder according to claim 1, characterized in that said rotor is assembled so as to rotate in said stator by means of a bearing intended in addition to dampen any axial forces likely to act upon said gearbox.

11. The electromagnetic retarder according to claim 10, characterized in that said bearing is a ball bearing.

12. The electromagnetic retarder according to claim 1, characterized in that said stator is fitted on the gearbox by means of an auxiliary fitting in addition to a principal fixing of the retarder on a chassis of a vehicle.

13. The electromagnetic retarder according to claim 1, characterized in that said first end of said first shaft is configured in such a way that it can receive said second shaft by hafting and in an axially sliding manner.

14. The electromagnetic retarder according to claim 1, characterized in that said second end of said first shaft is configured in such a way that it can receive said third shaft by hafting and in an axially sliding manner.

15. The electromagnetic retarder according to claim 1, characterized in that said second and/or said third shaft are hafted respectively in the first end and the second end, respectively, of said first shaft and in that each is provided with a jaw end intended to constitute an integral section of a cardan joint by which respectively said propshaft linked to the gearbox and said propshaft linked to driving wheels is connected to the retarder.

16. The electromagnetic retarder according to claim 13, characterized in that said rotor is assembled so as to rotate in said stator by means of a ball bearing.

17. The electromagnetic retarder according to claim 13, characterized in that said rotor is fixed on said first shaft by means of bolts.

18. The electromagnetic retarder according to claim 1, characterized in that said first shaft is configured at one of its first or second ends in such a way that it can be coupled to a corresponding shaft in an axially sliding manner and provided at the other of its two ends with a coupling plate making it possible to fix a propshaft thereto.

19. The electromagnetic retarder according to claim 1, characterized in that said second shaft is a gearbox output shaft.

20. A motor vehicle having a gearbox and an output shaft of this gearbox as a motive source and driving wheels as a load, wherein said vehicle comprises a retarder according to claim 1.

21. A method of installing a retarder in a motor vehicle according to claim 1, said vehicle initially having two propshafts connected to one another by a cardan joint, characterized in that one of the two original propshafts is replaced and in that the other is adapted so that it can be connected to a retarder

22. The electromagnetic retarder according to claim 6, characterized in that said second shaft is a gearbox output shaft.